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RAPIDLY ASCEND TO THE PEAK OF NATURAL SCIENCES THEORIES

By Chou P'ei-yuan

- COMMUNIST CHINA -

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[Following is a translation of an article written by Chou P'ei-yuan, Vice-President of Peking University, in Chung-kuo Ch'ing-nien Pao, Peiping, 14 July 1960, page 3.]

Under the bright red banners of the general line, the great leap forward, the peoples commune, technical renovation and technical revolution have developed into a mass movement which has swept through the whole nation. New developments occur every single day and it has become the inexhaustible source and power for our productive development. Science derives from productive experiments. Under the inspired leadership of our Party and Chairman Mao, 650 million people in our country are participating in Socialist construction on an enormous scale. It is a gigantic productive performance which is unprecedented in history, thus it will undoubtedly create a great leap forward in our development of natural science theories.

Looking back at the production and great construction during the past ten years in our country, especially the big leap forward in construction of the past two years, there is full proof for the objective theory that the development of productive power paves the way for the progress in scientific theories. Socialist economic and natural [geographical] areas, a thorough examination of all resources, the development of motive power, the basic materials and new technical skills, the promotion of work in the fields of water conservation, communications, agriculture, forestry, stock-raising, medicine, etc., have all been delineated, promoted and expanded.

These aspects of productive construction are involved intricately but closely with natural sciences.

The general line swiftly and precisely pointed out the goals. In the productive experiment, the improvement in the quantity and the quality of production, the saving of basic materials and labor and the lessening of the degree of labor and at the same time guaranteeing the quantity and quality of the product, etc., are all practical problems.

To solve these practical problems, it is not sufficient to use the existing theories in the world today. We must create some new theories. At the same time, in the process of material production, often we discover new methods of production, acquire new experiences in production and unearth new natural phenomena. These new gains must be abstracted and elevated by theories.

At present, one of the most important functions of scientific workers is to strengthen research in basic theories. Theoretical science in our country, under the leadership of the Party, is also traveling the course of the mass line. Relying on the support and constructive efforts of the masses, we have already created some theories of our own. Making scientific theories work in the direction of the mass line is a new development in Mao Tse-tung ideology. It has brought new victories in the development of scientific theories. The big leap in agricultural production in 1958 produced the "eight-letter" agricultural constitution which should serve as the policy towards a bigger agricultural harvest throughout the nation.

Under this general program, agricultural production posed a few new problems for theoretical research from the point of view of scientific research such as group physiology in botany, functions of photo-synthesis, and the study of soil composition, etc. The further study of these scientific problems will no doubt enrich biological and agricultural sciences, which will in turn stimulate the progress in agricultural production.

Chinese medicine and herbs have a long history and their effects have been proven, yet they urgently need scientific theories to summarize and upgrade them. Our large-scale and historical water conservation projects require not only the solving of the immediate problems in the technical field involved in the process of construction, but also possess new problems for research in the basic sciences such as mathematics, dynamics, physics, chemistry, geophysics (including meteorology),

geology, geomorphology, natural geography and economic geography, etc. Quite frequently it is only after these problems are solved before planning and application can satisfy the demands for swiftness and economy in production.

The national technical renovation program and the technical revolution have reached a climax. It has broken and will continue to break out of the confinements of many theories. At the same time, it is nurturing the birth of many more new scientific theories. We are taking these inventions and creations from the masses and attempting to explain these problems in theories. After we derive a common denominator, we can apply it as a basis to further upgrade and develop our creative inventions so that it may be utilized widely to spur a greater development in production.

On the other hand, the research in natural science theories quite frequently brings about a basic revolution in the material production and engineering skills in society. The peaceful use of the atom has brought the social productive force of mankind to the eve of a second industrial revolution. This cannot be separated from the research of basic theories in the atomic and nuclear physics fields, from the discoveries of natural radiation in matter, x-rays and electrons, to the establishment of theories on elements, relativity, nuclear fission, to the further discovery of neutron, radioactivity, and uranium splitting.

Over ten years ago, before the invention of the electronic computer, mathematical logic was considered as an abstract science in the mathematical field. Today, mathematical logic has become a necessity as theories for computer mathematics. Presently, we are engaged in a wide-scale productive experiment involving mathematical problems which must be solved by electronic computers. Radio and electronic sciences are now being utilized for national defense, industries, and experiments for various scientific theories in every day life. At the same time, in the fields of chemistry, biology, geology and other sciences, we can find many outstanding examples of research in basic theories which have led to successful applications in productive performance.

Our Party has always laid emphasis on the development of theories in natural sciences. During the revolution of higher education in 1952, our Party and the

government acted according to the advanced experiences of the USSR by establishing more than ten comprehensive universities for the purpose of training talent to develop theories in natural sciences.

In 1953, the Ministry of Higher Education sponsored a meeting for the comprehensive universities to discuss the means of upgrading the standards in education. It was pointed out that "the comprehensive universities are the more important landmarks in the development of culture and science in our country." In 1958, during the big leap forward movement, many more comprehensive universities and technical colleges were founded. In hundreds of normal colleges, normal schools, technical colleges and technical schools, we can find courses and specializations in natural sciences.

Under this consideration of the Party, the younger generation in the field of natural sciences has matured quite rapidly. Hereafter, natural science theories in our country, under the leadership of the Party and Chairman Mao, are built on the solid foundation of the masses and mobilized by Mao Tse-tung ideology which will undoubtedly radiate brightly in the international field of natural science theories.

Under the present "we are getting better every day, while the enemy is deteriorating day by day" international situation, we urgently require many young cadres for the development of natural science theories, especially when our national Socialist construction has achieved the "each wave higher than the other" stage. It is the glorious responsibility of our youth to learn and master the theories in natural sciences. But we must consider from the point of view of the general direction of Socialist construction's as to the participation in study and research in natural sciences. Youth in the Mao Tse-tung generation must diligently study the works of Mao Tse-tung and mobilize themselves with Mao Tse-tung's ideology. They should further follow faithfully the course of collectivism to become red and expert under the leadership of the Party. Only then can our younger generation make an outstanding contribution towards "knowing nature and changing nature."

Our young scientific workers and technical personnel must emulate the glorious heroes who scaled Mount Chuluang-ma by answering promptly the great call of the Party -- "draw ambitious plans and make strong decisions; use all efforts to climb the highest summit." The red banner of victory in Mao Tse-tung ideology should be flying on the apex of every natural science theory all over the world!